I-184

INTER-OFFICE MEMO **TENNECO CHEMICALS, INC.**

TO P.R. Scarito AT Burlington DATE May 18, 1976

FROM F.W. Kanzler/W.W. Heal AT Burlington COPY TO W.F. Gabel
P M. Reed
F.X. Ritter
G.I. Rozand
A.C. Siegel
F. Toca
/File
bcc R.A. Lojewski

SUBJECT OSHA Inspection

Summary

The Burlington Plant site has undergone an OSHA industrial hygiene inspection since April 26, 1976 with one more inspection in the Compound Plant - for carbon black particulate testing - outstanding. Inspection dates for the Resin Plant were April 27, 1976, May 3, 1976, May 6, 1976 and May 10, 1976 at which time personal VCM monitoring, dust monitoring and area VCM monitoring were performed. Inspection dates for the Compound Plant were May 27, 1976 and May 29, 1976 at which time personal particulate measurements were taken to characterize lead, cadmium and barium exposures of operating personnel. In addition, an initial meeting with the two OSHA inspectors (OSHA CSHOs) and plant management as well as Compound Union representatives was held on April 26, 1976 and an interim meeting with plant management and Union representatives from the Resin Plant was held on May 7, 1976.

Listed below is an outline of the meetings and inspections for the above dates:

I. Initial Meeting and Plant Tour

On April 26, 1976 Messrs F. Lewis and R. Hanlon, OSHA CSHOs from the United States Department of Labor, Camden Office, visited at the Burlington Plant requesting an industrial hygiene inspection.

As a preliminary to the actual inspection, the CSHOs requested a meeting with Tenneco representatives in the Compound Plant. Messrs W.W. Heal, P.N. Thomas, P.R. Scarito and F.W. Kanzler were present to meet with the CSHOs. The discussion centered primarily around the Tenneco biological testing programs including frequency of testing, type of testing and actions to be taken if an overexposure should occur. Also discussed were respirators and their mandated use by the various plant personnel, general housekeeping practices and safety meetings conducted; the latter item in particular, as related to an instruction on safe handling practices of lead and other powdered stabilizers. Mr. Hanlon requested and was provided with the OSHA log 100 for 1975 and 1976 to date. Formulation recipes were requested by Mr. Hanlon for the compounds run during the time of the expected particulate monitoring.

Following a meeting with a Compound Union representative - R. Horvath - the CSHOs requested a plant tour of the Compound Plant. Both lines, all levels and the exhaust area on the plant roof was inspected.

After the plant tour, the CSHOs were given the opportunity to meet with the plant physician, Dr. M.C. Venditti, to further discuss the biological testing program and test data.

A second meeting was requested for the Resin Plant with Messrs W.W. Heal, P.R. Scarito, A.C. Siegel and F.W. Kanzler representing Tenneco. Topics covered were (1) a review of deregulated areas including data generated, (2) mode, type and frequency of personal monitoring samples, (3) reviewed in detail the status of the Engineering program at which time Mr. Lewis requested a monthly status report for this program to be sent to the Camden office, and (4) the personal VCM results as listed in the alphabetical personnel roster were reviewed in detail by Mr. Hanlon.

Mr. Lewis was provided with copies of AOPs M-5, M-6, M-7 and M-8. In addition, a copy of EOP 11, the OSHA log 100 for 1975 and 1976 and a copy of the OSHA summary 102 for 1976 was given to the CSHO.

A detailed review of the standard was conducted by Mr. Lewis to clarify possible areas of misinterpretation. The only differences of opinion, as Mr. Lewis pointed out, were found to be in the area of fifteen-minute ceiling samples, which should be taken on a regular basis along with the eight-hour TWA samples; personal exposure samples exceeding 1 ppm should be retaken on the same employee and not for the same job classification with a different employee.

There was no request made by the CSHOs to meet with Resin Plant Union representatives.

II. Hygiene Inspection - Resin Plant

A. Copolymer - VCM

On April 27, 1976 a personal VCM monitoring survey was conducted by Mr. Lewis in the Copolymer Plant. Mr. F.W. Kanzler took parallel samples for Tenneco. The CSHO used Sipin pumps at a flow rate of about 50 ml/minute. SKC pumps with the same flow rates were used for the Tenneco samples. Eight-hour TWA, as well as fifteen-minute ceiling samples, were taken. The following is a listing of the personnel monitored:

		Number of Samples			
		Eight-Hour TWA		Fifteen-Minute Ceiling	
Name	Job Classification	OSHA	Tenneco	OSHA	Tenneco
J. Webster	reactor oper - chg	1	1	3	3
I. Raymond	reactor oper - dmp	1	1	4	4
H. Wallace	bagger - cleaner	1	1	4	4

(Tenneco results are summarized in the attached Table I.)

No other type of inspection was made, neither was any attempt made to establish work patterns for the people monitored.

The Union representative present all day was Mr. W. Comegno who had very animated conversations with Mr. Lewis throughout the day.

B. Homopolymer - VCM

On May 3, 1976 a personal VCM monitoring survey was conducted by Mr. Lewis in the Homopolymer Plant. Mr. Kanzler took parallel samples for Tenneco. The CSHO used new DuPont pumps at a flow rate of about 50 ml/minute, while SKC pumps were used by Tenneco. Again, eight-hour TWA, as well as fifteen-minute ceiling samples were taken. Due to a pump malfunction, only a limited amount of fifteen-minute ceiling parallel samples could be taken. All Tenneco pumps were in use for the Homopolymer Plant survey and the "A" Plant survey - see below. The following is a listing of the personnel monitored:

		Number of Samples			
		Eight-Hour TWA		Fifteen-Minute Ceiling	
Name	Job Classification	OSHA	Tenneco	OSHA	Tenneco
R. McFadden	reactor oper - chg	1	1	4	3
R. Espenschied	reactor oper - dmp	1	1	4	1
A. Anicic	bagger - cleaner	1	1	4	2

(Tenneco results are summarized in the attached Table II.)

No other type of inspection was made. No work pattern was established by the CSHO. The Union representative present for all day was Mr. F. Roessler.

C. Dispersion - "A" Plant

Also on May 3, 1976 a personal VCM monitoring survey was conducted by Mr. Hanlon in the Dispersion "A" Plant. Mr. W.W. Heal was present as the company liaison and Mr. R. Laws to take the parallel samples. Mr. Hanlon used Sipin pumps at a 50 ml/minute flow rate and SKC pumps were used by Tenneco to conduct the survey. A shortage of pumps allowed only a limited amount of fifteen-minute ceiling parallel samples to be taken. The following is a listing of the personnel monitored:

		Number of Samples			
		Eight-Hour TWA		Fifteen-Minute Ceiling	
Name	Job Classification	OSHA	Tenneco	OSHA	Tenneco
J. Canterbury	tower oper - chg	1	1	3	2
W. Simpkins	tower oper - dmp	1	1	4	3
W. Navarro	tower clnr - jet clnr	1	1	3	2

(Tenneco results are summarized in the attached table III.)

While no work patterns were established by Mr. Hanlon, he requested information on the types of chemicals charged to the batch mix tank including the catalyst types.

The Union representative present for all day was Mr. F. Roessler alternating between the Copolymer and Dispersion Plants. It may be of interest to note that prior to proceding to the plant, Mr. W. Comegno accused both CSHOs of failing to have an opening meeting with the Union. Mr. Lewis pointed out that an opening meeting was held with the Union at the inspection on December 24, 1975.

D. Bagging, Dryer, Warehouse and Atomizer - Dust

On May 6, 1976 a personal dust monitoring survey was performed by Mr. Lewis covering operating personnel in the bagging, dryer, warehouse and atomizer areas. Representing Tenneco were Dr. F. Toca and Mr. W.W. Heal. OSHA took respirable dust samples utilizing MSA pumps at a flow rate of 1.8 l/minute fitted with a 0.5 micro filter and a cyclone attachment. Due to a lack of availability of a cyclone attachment, parallel samples taken by Tenneco represent total dust samples using a Bendix pump set at a flow rate of 1.5 l/minute fitted with a 0.8 micron open-face filter. The CSHO used four pumps, while only three pumps were available for Tenneco. The following is a listing of the personnel monitored:

		Number of Samples Eight-Hour TWA	
Name	Job Classification	OSHA	Tenneco
R. Paxton	plastisol bagger	1	1
E. Dever	atomizer operator	1	1
J. York	suspension dryer operator	1	1
D. Motta	warehouseman	1	-

(Tenneco results are summarized in the attached table IV.)

A general inspection was conducted by Mr. Lewis in all the above areas. The following pictures (attached) were taken during this inspection tour:

1. plastisol bagging area
2. plastisol bagging machine
3. plastisol bagger wearing sampling pump
4. two pictures of the general warehouse area
5. suspension dryer panelboard with operator wearing sampling pump
6. plastisol bagging machine, east view
7. plastisol bagger wearing dust mask

The Union was represented by Mr. F. Roessler for the whole day.

E. Atomizer Room - VCM

On May 10, 1976 Mr. Lewis made an area VCM monitoring survey of the atomizer room to confirm justification of deregulation of this area. Eight-hour area TWA samples were taken at the north and south ends of the atomizer room. In addition, three fifteen-minute ceiling samples were taken at the south end and one at the north end of the atomizer room. Mr. Kanzler took parallel samples for Tenneco which are summarized in Table V. In addition, the CSHO used a Gastec grab sampler. Both the OSHA sample and the Tenneco sample taken with the same type of sampler showed a VCM level of 0.2 ppm.

The Union representative for the day was Mr. W. Mayer. An apparent complaint by the Union, using asbestos insulation on blend tanks, was investigated. A picture was taken of blend tank #3 (attached), showing exposed asbestos insulation at the outside bottom of the blend tank. Additional pictures were taken of the sample pump locations at the north and south areas of the atomizer room. Also, the "A" fine products bin and the primary screw areas were photographed.

III. Hygiene Inspection - Compound Plant

A. Compound Plant - Airborne Particulates

On April 27, 1976 Messrs F. Lewis and R. Hanlon (OSHA-CSHO) with Messrs F.W. Kanzler and W.W. Heal proceeded to sample the following personnel for lead:

		Sampled for Lead Eight-Hour TWA	
Name	Job Classification	OSHA	Tenneco
K. Elberson	mixer - line #1	1	1
R. Tomaszewski	mixer - line #2	1	-
B. Cunningham	mill operator - line #1	1	-
F. Anstey	line operator - line #1	1	-
R. Lessard	utility services operator	1	1
J. Fate	short weight operator	1	-

(Tenneco results are summarized in the attached table VI.)

The equipment used by OSHA was MSA pumps set at 1.5 liters per minute using 0.8 micron filters. Tenneco used Bendix pumps set at 1.5 liters per minute using 0.8 micron filters. Both OSHA and Tenneco used closed-face filter cartridges (button sample).

Messrs Lewis and Hanlon introduced themselves to the Union representative, Mr. Anstey and explained to him what they would be doing. He chose not to stay with the group.

Once the initial pumps were placed on the personnel, CSHO Lewis and Mr. Kanzler returned to the Resin Plant to monitor for vinyl chloride.

While the personnel monitoring was taking place, CSHO Hanlon took the following pictures (Tenneco was unable to take parallel pictures):

1. three pictures of mixer on line #1 dumping bags of resin into blender
2. lead weighing booth - line #1
3. #2 blender, south view - line #1
4. short weights setting on pallet
5. blenders, north view - line #1
6. clean room, from door
7. blenders, east view - line #2
8. blenders, northeast view - line #2

The lunchroom, shower room and locker room were inspected. CSHO Hanlon's comment during this inspection was he felt that the employees should not travel through the lunchroom to get to the locker room and shower area with contaminated clothing on. He also stated that the washing up facilities should be separate from the lunchroom.

CSHO Hanlon also indicated that these facilities should be cleaned up on a per-shift basis, rather than once every twenty-four hours.

B. Compound Plant - Airborne Particulates

On April 29, 1976 Messrs F. Lewis and R. Hanlon returned and indicated they would be sampling for the following: lead, barium and cadmium. W.W. Heal was present representing Tenneco.

The following personnel were sampled:

		Eight-Hour TWA	
Name	Job Classification	OSHA	Tenneco
K. Elberson	mixer - line #1	1	1
R. Tomaszewski	mixer - line #2	1	1
B. Cunningham	mill operator - line #1	1	-
K. Jenkins	mill operator - line #2	1	-
F. Anstey	line operator - line #1	1	-
R. Lessard	utility services operator	1	-

(Tenneco results are summarized in the attached Table VI.)

Equipment used by OSHA was MSA pumps set at 1.5 liters per minute, using 0.8 micron filters. Tenneco used Bendix pumps set at 1.5 liters per minute using 0.8 micron filters. Both OSHA and Tenneco used closed-face filters (button samples).

Wipe samples were taken using Whatman #41 filter paper, ash-less 11.0 cm diameter. This paper was moistened with deionized water before sampling. The following areas were sampled:

1. Lunchroom

   a. top of lunch tables

   b. catch tray in cigarette machine

   c. catch tray in snack machine

   d. catch tray in bottled soda machine

   e. shelving in refrigerator, plus crisper and meat drawers

   f. shelves in refrigerator door

   g. faucets on bottled water fountain and inside cup dispenser

   h. can opener, wiped cutting edges

   i. top of bottled water on fountain

   j. top of refrigerator

2. Clean Room

   a. top of operator's desk

   b. telephone mouth piece

   c. bottled drinking fountain, faucet and bottle top - also inside cup dispenser

   d. dispensing unit for salt tablets

The CSHOs were given the opportunity to listen to the taped talk Dr. Venditti had given to all Compound personnel as related to personal hygiene while working with lead.

The effectiveness of the ventilation was checked for the following exhaust ducts with smoke tubes.

1. lead weighing booth - line #1

2. #1 and #2 blender exhaust ducts - line #2

3. lead weighing facility at line #2

Checked ventilation of the following exhaust systems with a velometer:

1. lead booth - line #1

2. exhaust duct, #1 blender - line #1

3. #1 blender at fill grate - line #1

4. lead scale - line #2

A drawing was made of each scoop, sections were drawn in and velometer readings were entered for that given area.

The CSHO took pictures during the time of the velometer readings from the following areas:

1. clean room through the door, two pictures

2. lead weighing facilities, line #2

3. storage of raw materials on line #2 mixing floor

4. lead weighing facility including lead short weights at line #2

5. air conditioner intake for clean room in relation to exhaust discharge from #1 mill line at roof area

6. line operator and mill - line #1

7. mill operator and mill - line #1

8. mill operator on forklift at line #2

The following pictures were taken at the lunchroom:

1. vending machines and refrigerator

2. soda machine

3. line operator at lunch table

4. general picture of lunchroom including both lunch tables

Tenneco was unable to take pictures at that time.

IV. Interim Meeting and Inspection of Hygiene and Analytical Facilities

On May 7, 1976 Messrs Hanlon and Lewis met with Messrs P.R. Scarito and W.W. Heal to give a status report on the inspection to that date. No comments were made whether any citations will be issued. With the exception of the dust data taken on May 6, 1976 in the Resin Plant, no analytical data was available from OSHA. In the case of the dust, no numbers were released to Tenneco, however, the CSHO indicated the dust readings were well below the standard.

The CSHOs then met with representatives from the Union - Messrs H. Stellwag and F. Roessler.

Following the meeting, the CSHOs requested a tour of the mask washing facility and the Analytical Laboratory. Mr. Lewis requested to be provided with the following forms: daily respirator inspection record, weekly mask cleaning record and monthly charcoal tube report form. In addition, a copy of the analytical charcoal tube method was requested.

Fred W. Kanzler W.W. Heal

F.W. Kanzler/W.W. Heal

Attachments

FWK-WWH/jst

TABLE I

OSHA INSPECTION

PARALLEL SAMPLES

COPOLYMER PLANT

Eight-Hour TWA - VCM

Job Classification	Date Sampled	Time in Air, min	TWA, ppm VCM	Standard, ppm VCM
Reactor Oper - chg	4/27/76	0	0.65	1.0
Reactor Oper - dmp	4/27/76	1	0.63	1.0
Bagger - Cleaner	4/27/76	120	11.1	1.0

Fifteen-Minute Ceiling

Job Classification	Date Sampled	Time in Air, min	ppm VCM	Standard, ppm VCM
Reactor Oper - chg	4/27/76	0	1.9	5.0
		0	0.4	5.0
		0	0.5	5.0
Reactor Oper - dmp	4/27/76	0	1.2	5.0
		0	0.9	5.0
		0	0.5	5.0
		0	0.6	5.0
Bagger - Cleaner	4/27/76	15	64.0	5.0
		15	38.0	5.0
		0	0.5	5.0
		0	0.8	5.0

F.W. Kanzle
5/17/76

TABLE II

OSHA INSPECTION

PARALLEL SAMPLES

HOMOPOLYMER PLANT

Eight-Hour TWA - VCM

Job Classification	Date Sampled	Time in Air, min	TWA, VCM ppm	Standard, ppm VCM
Reactor Oper - chg	5/3/76	14	0.54	1.0
Reactor Oper - dmp	5/3/76	16	0.31	1.0
Bagger - Cleaner	5/3/76	20	3.1	1.0

Fifteen-Minute Ceiling

Job Classification	Date Sampled	Time in Air, min	ppm VCM	Standard, ppm VCM
Reactor Oper - chg	5/3/76	0	0.9	5.0
		0	0.7	5.0
		0	1.0	5.0
Reactor Oper - dmp	5/3/76	2	0.5	5.0
Bagger - Cleaner	5/3/76	15	46.0	5.0
		0	0.4	5.0

F.W. Kanzle
5/17/76

TABLE III

OSHA INSPECTION

PARALLEL SAMPLES

DISPERSION - "A" PLANT

Eight-Hour TWA - VCM

Job Classification	Date Sampled	Time in Air, min	TWA, ppm VCM	Standard, ppm VCM
Tower Oper - chg	5/3/76	24	0.29	1.0
Tower Oper - dmp	5/3/76	40	0.45	1.0
Tower Cln - jet cln	5/3/76	210	0.73	1.0

Fifteen-Minute Ceiling

Job Classification	Date Sampled	Time in Air, min	ppm VCM	Standard, ppm VCM
Tower Oper - chg	5/3/76	0	0.3	5.0
		12	0.5	5.0
Tower Oper - dmp	5/3/76	10	1.0	5.0
		0	1.7	5.0
		0	1.3	5.0
Tower Cln - jet cln	5/3/76	15	0.5	5.0
		15	0.3	5.0

F.W. Kanzler
5/17/76

TABLE IV

OSHA INSPECTION

PARALLEL SAMPLES

RESIN PLANT

Eight-Hour TWA - Inert or Nuisance Dust (Total Dust)

Job Classification	Date Sampled	TWA, mg/m^3	Standard, mg/m^3
Plastisol Bagger	5/6/76	0.126	15.0
Atomizer Operator	5/6/76	2.799	15.0
Dryer Operator	5/6/76	0.208	15.0

W.W. Heal
5/17/76

TABLE V

OSHA INSPECTION

PARALLEL SAMPLES

RESIN PLANT - ATOMIZER ROOM

Eight-Hour TWA - VCM

Area	Date Sampled	TWA, ppm VCM	Standard, ppm VCM
Atomizer Room - N	5/10/76	0.05	1.0
Atomizer Room - S	5/10/76	0.12	1.0

Fifteen-Minute Ceiling

Area	Date Sampled	ppm VCM	Standard, ppm VCM
Atomizer Room - N	5/10/76	0.5	5.0
Atomizer Room - S	5/10/76	0.4	5.0
		0.4	5.0
		0.1	5.0

F.W. Kanzler
5/17/76

TABLE VI

OSHA INSPECTION

PARALLEL SAMPLES

COMPOUND PLANT

Eight-Hour TWA - Lead

Job Classification	Date Sampled	TWA, mg/m^3	Standard, mg/m^3
Mixer - line #1	4/27/76	0.543	0.2
Utility Services		0.159	0.2
Mixer - line #1	4/29/76	0.342	0.2
Mixer - line #2		0.286	0.2

Eight-Hour TWA - Barium

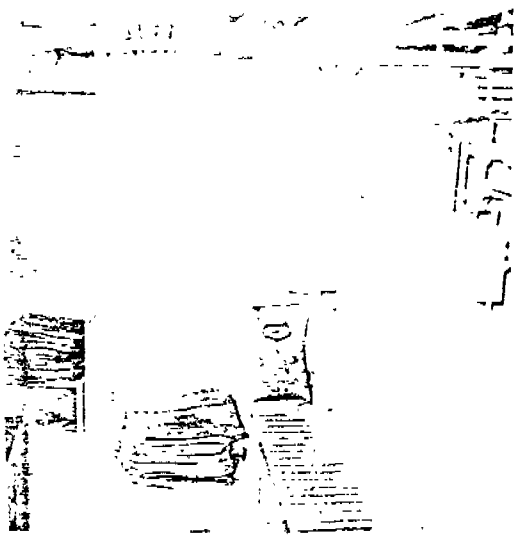
Job Classification	Date Sampled	TWA, mg/m^3	Standard, mg/m^3
Mixer - line #2	4/29/76	0.061	0.5

Eight-Hour TWA - Cadmium

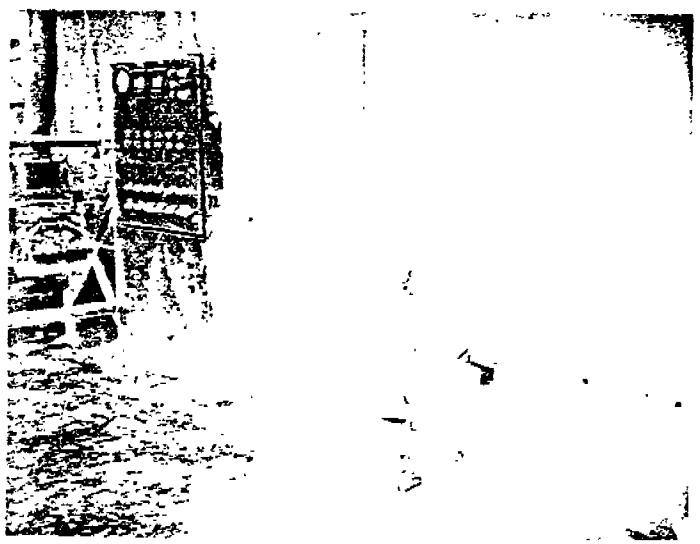
Job Classification	Date Sampled	TWA, mg/m^3	Standard, mg/m^3
Mixer - line #2	4/29/76	0.016	0.2

W.W. Heal
5/17/76

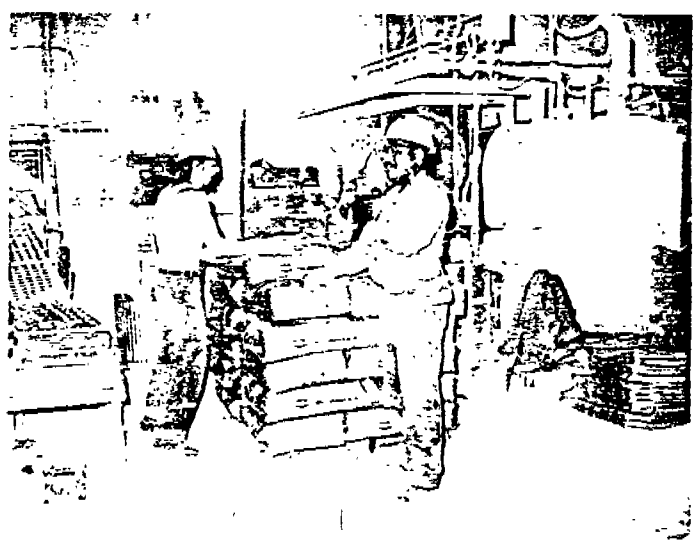
PICTURES TO II.D.



Plastisol Bagging Area



Plastisol Bagging Machine



Plastisol Bagger Wearing Sampling Pump